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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,732	06/20/2005	Yukio Nagasaki	2005-1011A	8595

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EXAMINER

CHEUNG, WILLIAM K

ART UNIT PAPER NUMBER

1713

MAIL DATE DELIVERY MODE

09/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/539,732

Applicant(s)

NAGASAKI ET AL.

Examiner

William K. Cheung

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>062005, 082405</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-29 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-8, 18-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeshi et al. (JP 08-133990).

*The invention of claims 1-17 relates to a **process to produce latex polymer particles** which is characterized in that polymerization reaction is conducted in an **aqueous medium** while the aqueous medium is stirred, said aqueous medium comprising:*

*(i) a **macromer** which has, on one **terminal**, a polymerizable **ethylenic group** and, on the **other terminal**, a **hydrophilic polymer segment** (which may be*

terminated with a ligand-introducing group) via or not via a hydrophobic polymer segment,

(ii) one or more kinds of **latex forming monomers**,

(iii) a **polymerization initiator**, and

(iv) optionally a magnetic body or a label.

The invention of claims 18-29 relates to **polymer latex particles**, as a **high-polymer material**, having an average particle size of **0.01 to 5 μm** when measured by a dynamic light scattering photometer (DLS), and in which their **surface layer (shell)** domain has **hydrophilic polymer segment**, said latex polymer particles being produced by the polymerization of

(a) **0.5 to 99.5 % by weight of macromer** which has, on **one terminal**, a polymerizable **ethylenic group** and, on the **other terminal**, a **hydrophilic polymer segment** (which may be terminated with a ligand-introducing group) via or not via a hydrophobic polymer segment, and

(b) **0.5 to 99.5 % by weight of one or more kinds of latex-forming monomer**, based on the weight of total monomer used.

Takeshi et al. (abstract) disclose reactive microsphere comprising a macromer comprising polyethyleneoxide chain of 1-1000 units (0007) which can be terminated

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with a hydroxyl group or an amino group (0012). Takeshi et al. (0012) also disclose that the microsphere has a size of 1-1000 nm (0.001-1 micron).

Regarding comonomers, Takeshi et al. (0015) disclose that the copolymer comprises styrene, methyl methacrylate, and divinylbenzene. Takeshi et al. (0003) disclose that the microspheres are in the form of latexes.

Regarding claims 1, 3, since the recited "magnetic body or a label" of claim 1 clearly indicates that the recited feature is an optional item for the instantly claimed invention, the examiner has a reasonable basis that the rationale set forth for the instant rejection is adequate.

Regarding claim 2, Takeshi et al. (0018) disclose azo compound, and ammonium persulfate that can initiate a free radical polymerization through a redox reaction.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 11-13, 16, 17, 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi et al. (JP 08-133990).

Set forth from paragraph 2 of instant office action, the invention of claims 11-13, 16, 17, 25-29 is very similar to the invention disclosed in Takeshi et al.

The difference between the invention of claims 11-13, 16, 17, 25-29 and Takeshi et al. is that Takeshi et al. do not disclose a system comprising two macromers.

However, Takeshi et al. (abstract) disclose reactive microsphere comprising a macromer comprising polyethyleneoxide chain of 1-1000 units (0007) which can be terminated with a hydroxyl group, amino group (0012) and other functional groups. Since Takeshi et al. (0012) disclose the functional equivalence of hydroxyl, and amino groups, the examiner has a reasonable basis to believe that it would have been obvious to one of ordinary skill in art to incorporate two or more functional equivalent groups into the disclosed system of Takeshi et al.

6. Claims 9, 10, 14, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi et al. (JP 08-133990) in view of Daniel et al. (US 4,358,388).

Set forth from paragraph 2 of instant office action, the invention of claims 9, 10, 14, 15 is very similar to the invention disclosed in Takeshi et al.

The difference between the invention of claims 9, 10, 14, 15 and Takeshi et al. is that Takeshi et al. do not disclose a system comprising magnetic particles.

Daniel et al. (abstract) disclose a system comprising magnetic particles. Motivated by expectation of success of developing magnetic polymers in the form of gels or particles (col. 1, line 10-15), it would have been obvious to one of ordinary skill in art to incorporate the magnetic particle teachings of Daniel et al. into Takeshi et al. to obtain the invention claim 9.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K. Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



William K. Cheung, Ph. D.

Primary Examiner

September 14, 2007

**WILLIAM K. CHEUNG
PRIMARY EXAMINER**